

Illustrated Catalogue

Telephone,
Long Distance
No. 725
Williamsburgh

CHASERS,
KNEADING MACHINES,
ENAMEL MILLS AND
DISINTEGRATORS.

MILLS AND MIXERS
FOR LIQUID AND
PASTE MATERIALS.

- - - OF IMPROVED **Paint, Printing Ink,
Mixing and Grinding Machinery.**

MANUFACTURED BY

CHARLES ROSS & SON, COMPANY.

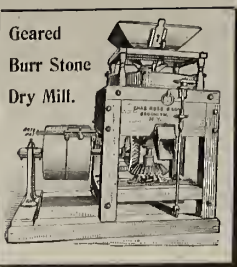
16, 18 & 20 STEUBEN STREET,

Twenty minutes from New
York City Hall via Brooklyn
Bridge and Flushing Ave. Car.

Brooklyn, N. Y.

U. S. A.

Ten Minutes from Broadway
Ferries, 23rd St., Grand and
Roosevelt St. from New York.



Geared
Burr Stone
Dry Mill.

CHARLES ROSS & SON,

16, 18 & 20 STEUBEN STREET, BROOKLYN, N. Y.

--- BUILDERS OF ---

BURR STONE MILLS.

FEED MILLS.

DRUG MILLS.

CLAY MILLS.

GRAIN MILLS.

PAINT MILLS.

GREASE MILLS.

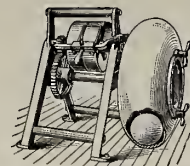
SPICE MILLS.

MUSTARD MILLS.

SALT MILLS.

CHOCOLATE MILLS.

DYE STUFF MILLS.



Drug and Chemical Mill.

PULP COLOR MILLS.

WHITE LEAD MILLS.

PRINTING INK MILLS.

READY MIXED PAINT MILLS.

COLOR CRUSHERS AND MILLS.

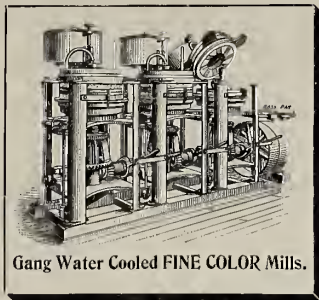
WHITE LEAD CHASERS.

DRUG CHASERS.

WHITING CHASERS.

PUTTY CHASERS.

PORTABLE PAN OR CHASER MILLS.



Gang Water Cooled FINE COLOR Mills.

IRON, PAINT AND
COLOR MILLS.

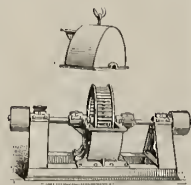
ORE SAMPLING MILLS.

DOUBLE ECCENTRIC PULP MILLS.

THREE ROLLER INK,
LEAD AND COLOR MILLS.

TWO ROLLER INK
AND COLOR MILLS.

COMPOSITION, PAINT
AND COLOR MILLS.



No. 66. Disintegrator.

IMPROVED DRAG MILLS
FOR ENAMEL.

MERCURIAL OINTMENT MIXERS.

PILL MASS MIXERS.

DYE MIXERS.

PAINT MIXERS.

COLOR MIXERS.

WHITE LEAD MIXERS.

PRINTING INK MIXERS.

LITHOGRAPHIC INK MIXERS.

READY MIXED PAINT MIXERS.

DOUGH KNEADERS
AND MIXERS.

KALSOPINE AMALGAMATORS AND
MIXERS.

BOLTING MACHINES.

SIFTING MACHINES.

BARREL PACKERS.

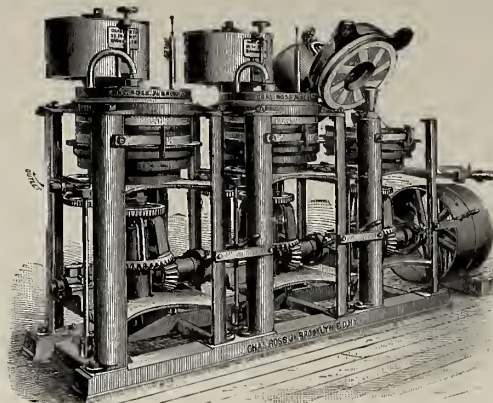
CAN BURNISHERS.

CAN FILLERS.



Water
Cooled
FINE
COLOR
Mill.

No. 10. Gang of Three 16 inch Water Cooled Mills, WITH DETACHABLE AUTOMATIC FEEDS.



CHARLES ROSS & SON,

10, 18 & 20 Steuben St., Brooklyn.

These Mills are the same as No. 9 Iron Frame Mills shown on page No. 4. Mounted on solid Iron Bed Plate, driven by one shaft, with Clutches for each Mill, so they can be run singly or collectively on tight and loose pulleys to drive the whole.

The construction of these Mills is very simple. There are no Water Joints to break in opening and taking apart the Mill.

We guarantee these Mills to grind cool and fine without any water coming in contact with the material being ground.

For further description see page No. 4.

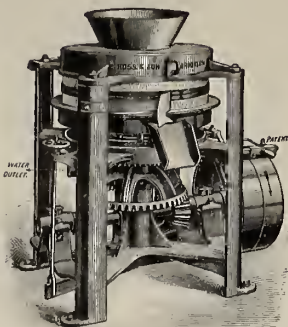
Esopus Stones will be furnished when not otherwise specified in order.

Floor Space required 8 ft. 2 in. length by 2 ft. 6 in. in width.

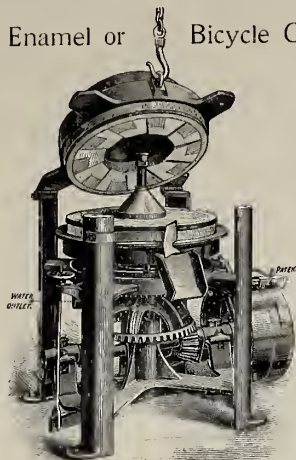
Ross' Improved Stone Paint and Color Mills

WITH HINGED TOP STONES.

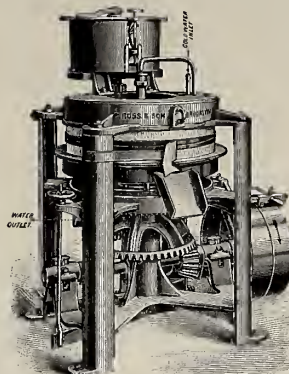
For Fine Colors in Oil or Varnish, Enamel or Bicycle Colors, White Lead and Paste Colors.



No. 9. Plain Lead and Color Mill with Detachable Hopper.



No. 9. With Top Stone Raised on Hinges.



No. 9. Water Cooled Mill with Detachable Automatic Feeder.

These Mills are most carefully built, all parts made to gauges and standard, all joints where castings meet are planed and finished.

The Iron Frames and Journal Bearings being cast in one solid piece it is impossible for any portion of the running parts to get out of line.

All Journal Bearings have Reservoirs for grease or oil, and are protected from dust or paint by hinged covers.

The Bush is our improved Reservoir Grease Bush with Bronze Metal Followers, which we pack with grease and will run without refilling for six months after leaving our works.

The Spindles are made of the best tool steel with hardened cock head and toes. The Hinged Top Stone is a great convenience, as the top stone can be quickly laid back for dressing and cleaning without disturbing the adjustment of the stones.

The Feeder Pot with automatic feed for feeding fine colors can be quickly detached without taking out any bolts. It has a revolving sweep or stirrer, scraping the bottom and sides of pot, keeping the colors in constant agitation,

preventing separation and precipitation and keeping a uniform feed. Cut spur gears, running smooth and noiseless, are used for driving these feeders.

We build four sizes of these Mills, which we can furnish with plain or water cooled stones, with flat or conical stones, and with or without the Detachable Automatic Feeder.

We build these Mills with Esopus or French Burr Stones. Esopus Stones will be furnished unless otherwise ordered.

We build the following sizes fitted complete with Tight and Loose Pulleys and our Patent Adjustable Belt Shifters.

16 in. Stones,	Floor Space required	37 in. by 31 in. including Feeder.
20 in. " " " "	45 in. " 38 in. " "	" " " "
26 in. " " " "	50 in. " 44 in. " "	" " " "
30 in. " " " "	57 in. " 48 in. " "	" " " "

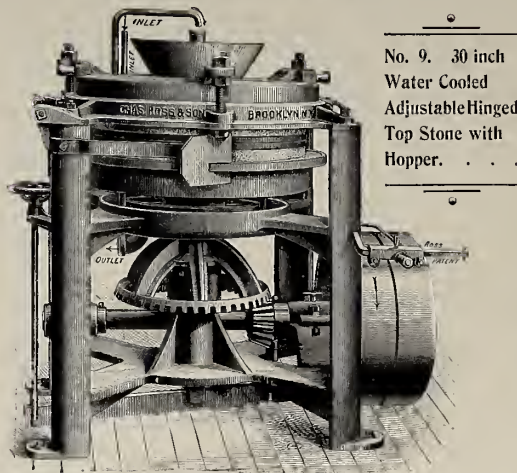
For illustration of No. 9—30 in. Mill see page 5. All Mills set up and run at our works to put in perfect grinding face for fine work before delivery for shipment.

Water can be entered at the side or back of mill.

Water Feed always in sight and under perfect control.

Ross' Improved Iron Frame Water Cooled White Lead and Fine Color Mills.

Water Feed always in Sight and under Perfect Control.
Built Plain and Water Cooled.



No. 9. 30 inch
Water Cooled
Adjustable Hinged
Top Stone with
Hopper.

The above 30 in. Mill differs from those on the preceding page in the following details.

The **Frame** is oblong instead of square, permitting the **Runner** to overhang the frame in front, and allowing the **receiver** to be put **directly under** the **Runner Stone**.

The **Top** hinges over to the **left side** instead of to the back of the Mill.

The **Top Stone** is adjusted on three standing bolts through the hinged casting, for the convenience of **lowering** and adjusting the **Top** or **Stationary Stone**, as the stones wear, to keep the **Runner** close to the **Bush**, or upper bearing of the spindle.

The **Hinged Top** can be **quickly raised** and laid over for dressing or cleaning without disturbing the adjustment of the **Top Stone**.

The **Frame** of this Mill is also cast in a **solid heavy casting** and planed and finished accurately to dimensions.

Improved **Wood and Iron Frames** will be furnished for these Mills, if preferred, see our No. 13, 36 in. White Lead and Paste Color Mills.

Ross' Improved No. 13, 36 inch White Lead and Color Mill.



The **Frame** of this Mill is built of heavy **Hard Wood** and **Iron**, all parts coming into contact with the working portion, including the **Hinged Top**, **Bush Bar**, **Step Bar**, and **Side Bearing Bar**, are all heavy castings, making a strong, substantial Mill, suitable for heavy work.

This Mill has all the improvements of our No. 9, 30 in. Mill, including the **Reservoir Grease Bush with Bronze Metal Followers**, **Spindle** and **Step** made of **Tool Steel**, **Bearings** of **Cross Shaft self-oiling**, and built with **Burr** or **Esopus Stones**.

The **Runner Stone** is **adjustable** or self-tramming on a **Cockhead**, adjusting itself to the wear of the **Stones**, see page 9.

Floor Space required 6 ft. 3 in. long, 4 ft. 1 in. wide, 4 ft. 2 in. high.

CHARLES ROSS & SON, 16, 18 & 20 Steuben St., Brooklyn, N. Y.

... ROSS' ...

No. 18. Improved Iron Paint and Color Mills.

WITH OR WITHOUT WATER COOLING CURBS.



The Patterns of these Mills

are of entirely new designs after
years of experience building

Iron Paint Mills.

Charles Ross & Son,

16, 18 & 20 Steuben St.,
Brooklyn, N. Y.

The Frames are our improved Four Legged Pattern, Runner overhanging,
and delivering Paint directly in front of Mill, avoiding use of long spouts.

Upper Bearing of Spindle Self-Oiling.

Driving Gear on Spindle is on a feather, and requires no adjustment.

The single Mill with Tight and Loose Pulleys is complete and self-contained.

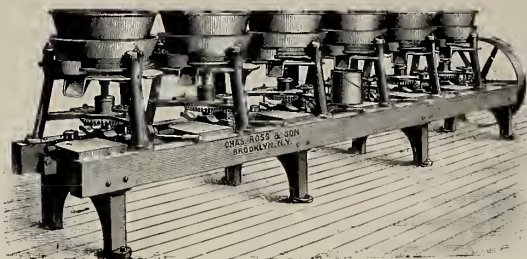
12 in. Mill, capacity of Hopper $3\frac{1}{2}$ gal. Floor Space required 2 ft. 6 in. long
by 1 ft. 8 in. wide.

14 in. Mill, capacity of Hopper 8 gal. Floor Space required 2 ft. 8 in. long
by 1 ft. 10 in. wide.

18 in. Mill, capacity of Hopper 12 gal. Floor Space required 2 ft. 11 in.
long by 2 ft. 2 in. wide.



Ross' Improved Gangs of Iron Paint and Color Mills.



No. 18.

Gang of six 18 inch Mills with Water Jackets.

They are strong and substantially built entirely of **Iron and Steel**.

The **Driving Shaft** runs in long **Self-Oiling Bearings** with **Hinged Covered Grease Cups**.

Our **Improved Mills** are built from **new patterns** with **Four Legged Iron Frames**, mounted on new designed **benches**, built entirely of **Iron and Steel**, no wood whatever being used in their construction.

The **Runners** overhang the **Frames**, and **deliver the Paint directly in front** of the Mill, so that it can drop into **Cans or Receivers** **without the use of** long or extended **Spouts**.

Each mill is **provided with a clutch** so they can be run **singly or collectively**.

Gangs of Iron Mills have the advantage of great economy in **Floor Space**. One **Driving Belt** and **One Pulley driving the whole**, reducing the cost and care of a number of Belts and cost of Pulleys.

We **build** the following sizes in gangs of **Two, Four and Six**.

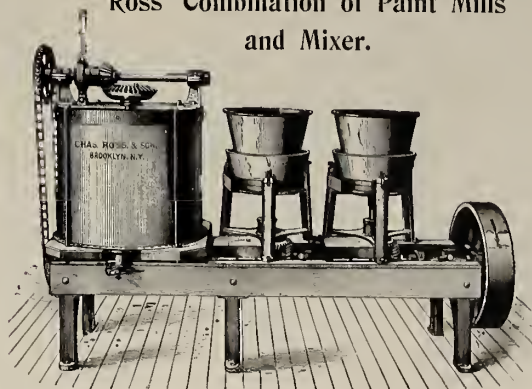
12 in., Capacity of Hopper $3\frac{1}{2}$ gal. Floor Space **12 ft. 6 in.** long by **1 ft. 11 in.** wide, height **3 ft. 6½ in.**

14 in., Capacity of Hopper **8 gal.** Floor Space **12 ft. 6 in.** long, **2 ft. 6 in.** wide, height **3 ft. 10½ in.**

18 in., Capacity of Hopper **12 gal.** Floor Space **14 ft. 10½ in.** long, **3 ft. 8 in.** wide, height **3 ft. 11½ in.**



Ross' Combination of Paint Mills and Mixer.



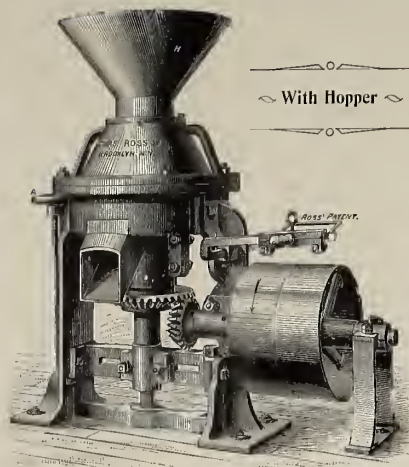
No. 20.

The above illustrates two **No. 18, 14 in.** Iron Paint Mills, and a **No. 36, 50 Gal. Liquid Paint Mixer** mounted on one Bench and all **driven by one shaft**. Each Mill and the Mixer is provided with a **clutch** so that any one of them can be stopped and started at any time **independently of the others**.

Floor Space required **8 ft.** long by **3 ft.** width. These **COMBINATIONS** can be made with our **No. 18 12 in., 14 in.** and **18 in.** Mills.

CHARLES ROSS & SON, 16, 18 & 20 Steuben St., Brooklyn, N. Y.

Conical Burr Stone Paint and Ink Mills.



STYLE No. 1.

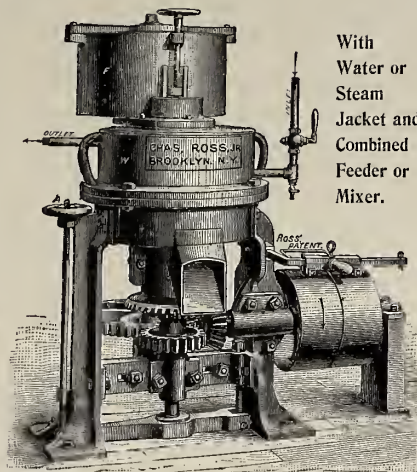
The above Mills are suited for Ready Mixed Paints, Semi-Paste Paints and Colors, Fine Printing Inks, Chocolate, Mixed Mustard, Lubricating Greases and Compounds, Paste Blacking, and every variety of grinding in Oil, Water or Varnish.

The grinding surfaces are Conical French Burr Stones, and are hard and durable. The faces are perfectly and accurately finished, forming a perfect Water Joint before the Dressing or Furrows are put in the Stones.

Style No. 1 is our Plain Conical Mill driven by Bevel Gears and Tight and Loose Pulleys.

Style No. 2 has a Water Cooling Jacket on the Upper Stone, otherwise it is the same as style No. 1.

Style No. 3 has a Combined Feeder or Mixer in place of Hopper, otherwise it is the same as style No. 1.



STYLE No. 4.

Style No. 4 has a Water Cooling or Steam Heating Jacket, and Combined Feeder or Mixer.

Style No. 5 is driven by Pulley direct on Spindle of Running Stone by quarter twist belt, (doing away with the noise of gears when running at high speed) for grinding Liquid Paints, Lubricating Greases and News Inks, &c.

Style No. 6 has Guide Pulleys on side of frame for guiding Belt from Pulley on Line Shaft on Ceiling over the Mill, thus avoiding a horizontal quarter twist Belt, and fitted also with large Hopper for holding a large quantity of material, otherwise it is the same as style No. 5.

We build styles No. 1, No. 2, No. 3 and No. 4 in two sizes, size No. 2 and No. 4.

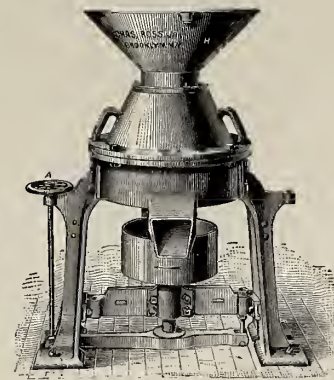
Size No. 2, Floor Space required 3 ft., 4 in. length by 1 ft. 6 in. width.

Size No. 4, Floor Space required 4 ft., 8 in. length by 2 ft. width.

Capacity of Size No. 2 for grinding Liquid Paints 100 to 150 gal. per day.

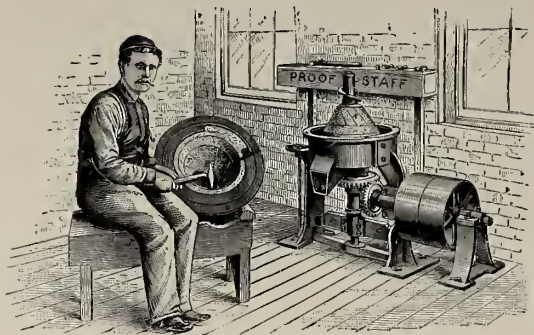
Capacity of Size No. 4 for grinding Liquid Paints 200 to 300 gal. per day.

CHARLES ROSS & SON,
16, 18 & 20 Steuben St., - Brooklyn, N. Y.



STYLE No. 5.

Ross' Conical Burr Stone Paint and Ink Mills.



No. 7.

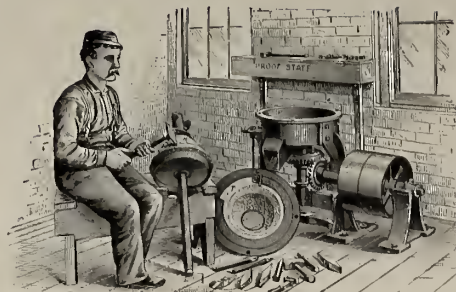
This view shows the **Top** of our **Stationary Stone** removed from Mill and laid on a bench for **Dressing**.

The **opening** or **taking apart** of these mills is quickly and easily done **not requiring over 5 or 10 minutes**.

By taking out **3 Bolts** the **Hopper** can be removed.

By taking out **4 Bolts** the **Top Stone** can be **lifted off**. This is the **heaviest part** to be handled and in the largest size, **No. 4 weighs 160 pounds**, can be handled by **two men** with ease.

MILL PICKS
OF
FINEST QUALITY
FURNISHED
WHEN ORDERED.



No. 8

This view shows the **Running Stone** lifted out of its bearings and laid on a block for **Dressing**.

The **Stones** can be put in a tub to conveniently and thoroughly wash and clean.

EXPLANATION OF ABOVE ILLUSTRATIONS.

T—Top or Stationary Stone. **R**—Running Stone.
P—Turned Pan or curb fitted with a revolving scraper which throws out of the spout the ground material as it comes from the stones.
S—Spout for delivering the ground material.



STYLE NO. 6.

With Extra Large Hopper and Guide Pulleys.

CHARLES ROSS & SON

16, 18 & 20 Steuben St., Brooklyn.

Ross' Double Eccentric Tub Mills.



DESCRIPTION: T—Tub or Curb. B—Bed Stone. D—Driver. L L—Levers to engage and disengage Driving Clutches. R—Runner or Eccentric Stone. O—Outlet to discharge material when ground. C C C—Covers for Tubs to keep out dust when running.

These Mills work on the **Molar principle**. The material passing down through the centre of the runner as indicated by the arrow shown over the eye of the stone so that the material is **constantly flowing back and reground over and over**. The **Molar** or **Top-Stone** is revolved around on the **Bed-Stone** and also revolves around on its own centre which gives it a **double Eccentric motion**.

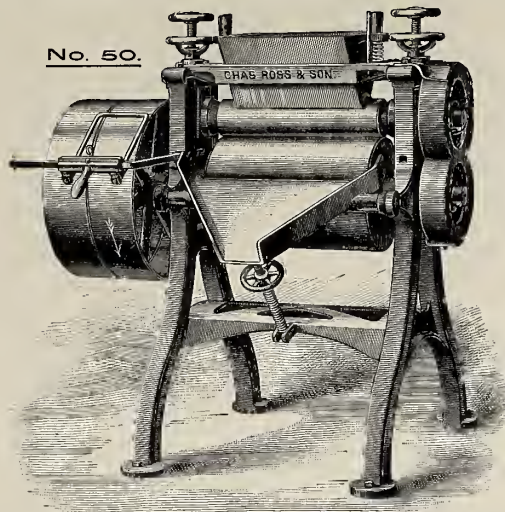
The **Periphery of the Running Stone**, forming perfect **Epicycloidal curves**, so that **no two parts** of the faces of stones **wear together**, as they are **constantly changing**, thus **wearing both bed and runner perfectly level**.

The **Running** of these Mills is exceedingly simple, requiring very little **Power** and **no attention**, except to put in a charge and draw it out when ground

to the desired fineness. With a little experience one will know just how long to let the charge remain in to be reduced as fine as desired.

We build **several sizes**, from **24 inch** to **54 inch** bed stones.

Drag Mills.—We also build **Improved Drag Mills** for **Dry Grinding** of Enamel, Feldspar, &c., for Enamellers and Pottery use. **PRICES ON APPLICATION.**



CHARLES
ROSS & SON,
16, 18 and 20
Steuben St.,
Brooklyn, N. Y.

Improved Two Roller Printing Ink and Color Mill.

Is adapted for grinding **Thin and Medium Stiff Printing Inks**, and is **easily operated and cleaned**.

A very convenient Mill where it is necessary to **change from one color to another frequently**.

It is very strong and substantially built of the best materials.

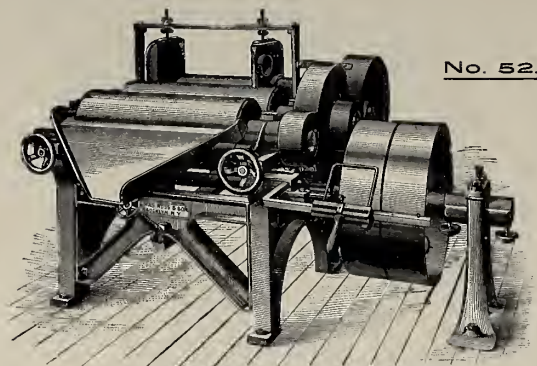
The **Rolls** are Steel 18. in. face.

The **Apron** is our improved detachable, planed and polished **Spout**, with thin steel changeable **Scraper Blade**.

The **Upper Roll** is **Adjustable** by which is given the Grinding Pressure.

Floor Space required, length 3 ft. 9 in., width 3 ft., Height from floor to top of Hopper 3 ft. 9 in. Size of **Pulleys** 20 in. diameter by 4 in. face.

No. 52. Improved Three Roller Mill.



No. 52.

For grinding **Printing or Lithographic Ink**, also colors in oil or varnish, **Chocolate**, and any pasty material.

These Mills are built in the very best possible manner, with or without **Vibratory Motion** on first or middle rolls.

Hollow Rolls are furnished for **Water Cooling** or **Steam Heating** when desired.

Granite Rolls will be furnished if preferred.

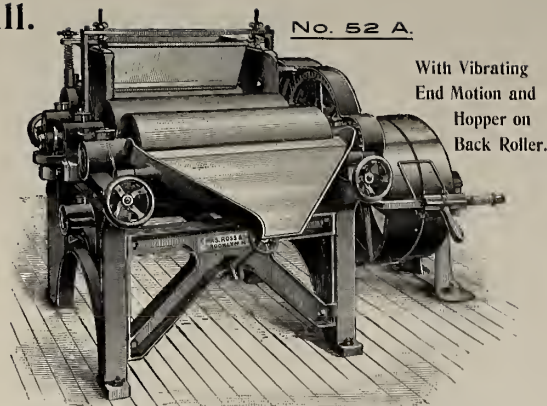
The **Frame** is so constructed that it is absolutely rigid and of great strength to withstand any strain when grinding heavy pigments.

The **Rolls** are of **Hard Steel** with an absolutely true and highly finished surface, presenting perfect and **durable grinding faces** for all fine colors. Our **Rolls will wear** for many years, grinding the hardest colors without grinding out of true, and grinding better than Granite without danger of breaking.

The **Shafts** are of **Steel** of large diameter and extra length.

The **Bearings** are of the finest quality of **Bronze Metal**, provided with **Hinged Covered Grease Cups** for perfect lubrication and to keep free from Dust and Grit.

The **Adjusting Wheels** for the front and back rolls are within easy reach of the operator so that the **Setting or Adjustment** of the rolls is under perfect control.



No. 52 A.

With Vibrating
End Motion and
Hopper on
Back Roller.

The **Gearing** is powerful cut gears, running smooth and **noiseless**, being **amply Guarded** for the protection of the operator, as shown in illustration.

The **Feed** or the **Adjustable Bronze Color Conductors** placed over the two **Back Rolls can be set** to feed a large or small quantity to the **Rolls** as the stiffness or quality of the ink may require.

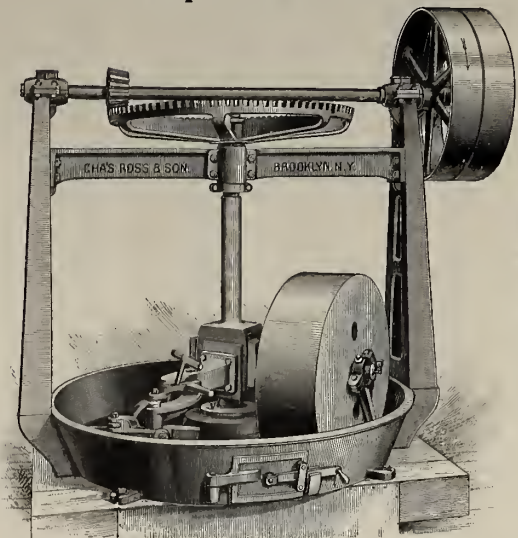
The **Apron** is our improved **Detachable Plated and Polished Spout** with thin steel **changeable Scraper Blade**. The **tension of the scraper** is given by a wheel and screw, the wheel pressing on a **Steel Spring** can be regulated to any desired pressure, also allowing the **scraper to adjust itself** when the position of the roll is changed.

We build the following sizes :

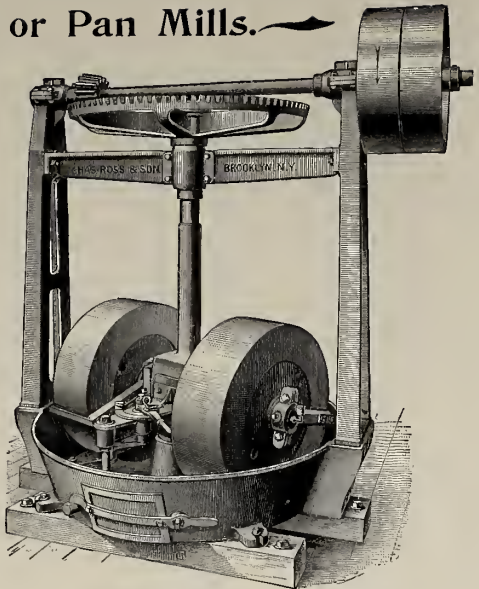
Rolls 6 in. diameter by		14 in. face.	Floor Space required		2 ft 6 in. by 3 ft.
" 9 "	" "	" 24 "	" "	" 3 "	" 9 " " 5 " 7 in.
" 9 "	" "	" 32 "	" "	" 3 "	" 9 " " 6 " 2 "
" 12 "	" "	" 30 "	" "	" 4 "	" 8 " " 6 " 8 "

CHARLES ROSS & SON, 16, 18 & 20 Steuben St., Brooklyn, N. Y.

No. 74. Improved Portable Chasers or Pan Mills.



CHASER WITH ONE ROLLER.



CHASER WITH TWO ROLLERS.

CHARLES
ROSS & SON,
16, 18 and 20
Steuben Street,
Brooklyn, N. Y.

For mixing Putty, White Lead, Roof Cement, Mortar, Mortar Colorings, Chocolate and Sugar, Clay and Loam for Foundries and Steel Works or any Pasty Materials.

Mixing and crushing lumpy materials in a dry or semi-dry state for Artificial Fuel, Battery Carbons, Oxide of Copper, Pot Shells, Glass, &c.

Complete and Self-contained strong and substantially built, the Gears or Running Parts cannot get out of line, always running smooth and easy, without any vibration to the building or floor above.

Self-discharging contents of Pan by reversing outside Pan Scraper, quickly discharges through gate in side of Pan.

We build them with Iron or Stone Beds and Rolls, and with one or two Rolls as required.

For Putty or White Lead we usually build them with one Roller.

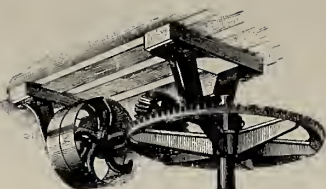
Sizes usually built,

A.—Pan	4 ft.	diameter,	Roller 1500 lbs.	Capacity 1800 lbs. per day.
B.—	4 ft. 8 in.	"	2000 lbs.	2500 " " "
C.—	6 ft.	"	3000 lbs.	4000 " " "

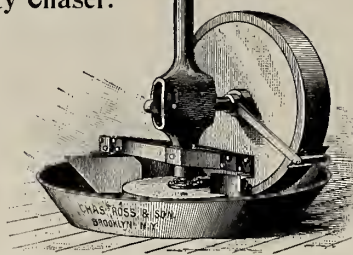
LARGER OR SMALLER SIZES BUILT IF DESIRED.

No. 92.

New Portable Revolving Bed Chaser or Pan Mill.



No. 44.

Improved White Lead
and Putty Chaser.

CHARLES ROSS & SON,
16, 18 & 20
STEUBEN STREET,
Brooklyn, N. Y.

With Pinion or
Pulley Shaft
and Bearings for
Vertical Shaft
attached to
ceiling.

Used for Mixing White Lead in Oil, Putty, Colored Mortar, or any hard lumpy material required to be crushed, and mixing with oil or other liquids in a Stiff Pasty Form.

Furnished with Gears, Tight and Loose Pulleys complete as shown above.

Pan can be set on a Foundation above the floor, and have gate for Self-discharging same as No. 74.

Upright Shaft can be made any length to suit height of ceiling where Chasers are to be used.

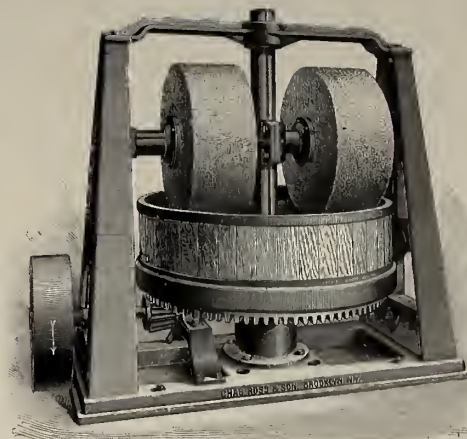
Size A. Pan 4 ft. diameter, Roll 1500 lbs.

" B. " 4 ft. 8 in. " " 2000 lbs.

" C. " 6 ft. " " 3000 lbs.

For capacity see page No. 12.

LARGER AND SMALLER SIZES BUILT IF DESIRED.



Used for Heavy Crushing of materials in a dry or semi-dry state, such as Enamels, Glass and other materials that must be kept free from iron or other metals, and for Pit Shells, Fire Clay, &c.

The Pan or Bed Stone Revolves carrying the material under the Rolls, which revolve on a fixed horizontal shaft, by contact with the Bed or Material on the Bed Stone.

We can furnish these Mills with Iron Pan and Iron Rolls, Bed Stone 4 ft. 6 in. diameter, Rolls 36 in. by 14 in. face.

The Mill is portable and self-contained, is very strongly built with new and improved method of lubricating the runner stones and step.

Floor Space, 8 ft. 5 in. by 5 ft. 2 in. Height 6 ft. 10 in.

Larger or smaller sizes built if desired with Burr or other stones.

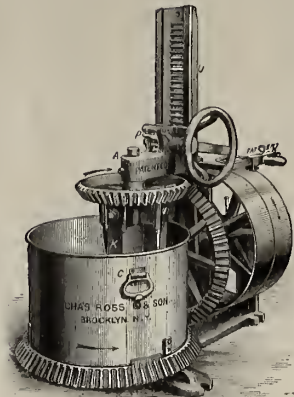
PRICES ON APPLICATION.

NEW, IMPROVED, PATENTED,

No. 30. Change Can Paint and Ink Mixer.

With Ross Patent Lifting Arm and Patent Belt Shifter.

ALL PARTS MADE TO STANDARDS AND
ARE DUPLICATE.



View showing Mixer Ready for Work.

This MIXER is very **simple, thorough, durable and cheap**, suitable for mixing **liquid, semi-liquid and heavy paste**.

DESCRIPTION. As shown in illustration the knives **K** are driven by the top wheel, and the can **C** is driven in the opposite direction by the bottom wheel, thus making a thorough mixing.

When the material is sufficiently mixed, reverse the Pawl **P** and by three turns of the wheel **W** the knives will be raised up the column **U** by a rack and pinion, the pawl **P** locking in pinion and preventing the **arm** from going down until released. (Shown in second view).

CAPACITY. 100 to 225 lbs. of paste according to the weight of material, or 15 gal. of liquid paint for mixing. 7 or 10 mixings can be made per day of 10 hours.

PATENTED, SEPT. 7th,
1886.

We are Sole Patentees
and Manufacturers of
Mixers with arm lifted by
SELF-CONTAINED
Mechanical Device.

All similar Devices are
Infringements
and liable to prosecution.

CHARLES ROSS & SON,
16, 18 & 20
STEBEN STREET,
Brooklyn, N. Y.



View showing the Knives Raised, to remove the can after the paint or ink is mixed.

CANS. Size 20 in. diameter by 13 in. deep, made of heavy sheet steel, galvanized, with handles on both sides for convenience of lifting off, so that the mixing can be carried to mills or set away until needed.

The cans being very **cheap**, a number of them can be used for different colors, saving time in cleaning, and time in emptying the mixer, as they can be taken off the machine in half a minute, and another can substituted.

We keep these cans in stock.

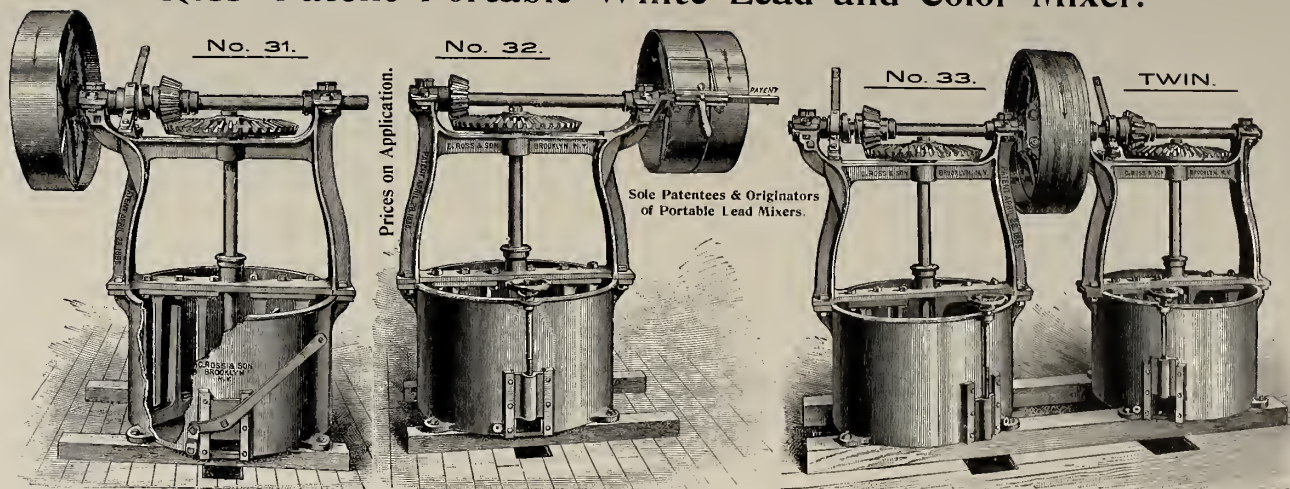
DIMENSIONS. Floor space 2 ft. 2 in. by 4 ft. Height 3 ft. 10 in. Diameter of T & L Pulleys 20 in. by 4 in. face.

PRICES ON APPLICATION.

Larger Size No. 30 Mixer with Cans 24 x 20 inches.

ALL PARTS CAN BE DUPLICATED AT
ANY TIME.

Ross' Patent Portable White Lead and Color Mixer.



The above are complete, compact and self-contained mixers, for mixing White Lead in Oil for stiff Paste Paints, Shoe Blacking, and other stiff moist materials.

They are Portable and convenient for transportation.

They can be set up ready for use by any one in a short time, there being no lining of shafts or adjustment of gears.

The frame and bearings are all cast in one heavy piece, and are planed and faced to standard sizes, all joints where castings are bolted together are carefully planed and faced, making a perfect, uniform and solid machine.

The Gates can be furnished to open with a lever, same as shown in cut No. 31, or to open with a screw, same as shown in cuts No. 32 and No. 33.

The Gates are all scraped and are absolutely water and oil-tight.

The Mixers consist of a lower sweep, scraping the bottom of the pot, having on it vertical knives, scraping the side of the pot, and cutting through the centre of the mass, also stationary knives projecting down from the top frame, cutting the mass forced against them by the revolving sweep and knives.

They can be driven from above or below the floor or platform from same shaft that drives the mills.

No. 31 Mixer is driven by a single pulley with clutch pinion for stopping or starting.

No. 32 Mixer is driven by tight and loose pulleys, having our patent adjustable belt shifter for shifting the belt.

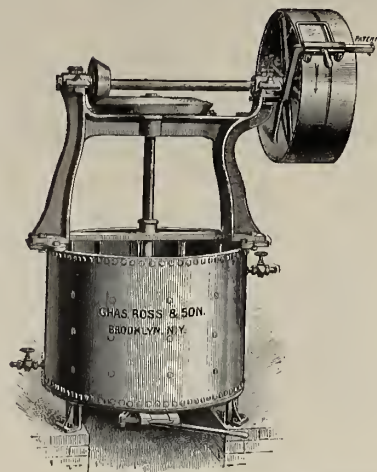
No. 33 Twin Mixers are driven by one pulley, and have separate clutch pinions for stopping each mixer independently.

The Gates on No. 33 Mixer are set close together so as to discharge into one Mill. The advantage of Twin Mixers are that one can be braking down a mixing, while the other is feeding the mill. By this arrangement the mill can be kept constantly grinding and no loss of time waiting for mixing.

SIZES AND CAPACITY.

Diameter.	Depth.	Capacity.	Size of Tight and Loose Pulleys.
24 x 20 inches.		400 to 600 lbs.	24 x 6 inches.
31 x 20 "		800 to 1200 "	30 x 6 "
36 x 24 "		1800 to 2600 "	36 x 6 "
42 x 30 "		3000 to 4000 "	

Ross' Patent Portable Steam Jacketed Paste Paint Mixers.

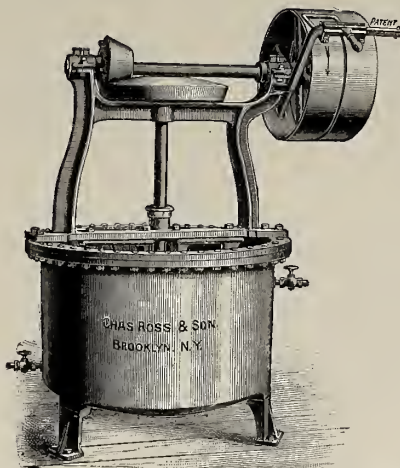


No. 32 A. With Steel Kettle Jacketed on Sides and Bottom with Discharge Gate on Bottom.

SIZES AND CAPACITY.

Diameter.	Depth.	Capacity.	Size of Tight and Loose Pulleys.
24 x 20 inches.		400 to 600 lbs.	24 x 6 inches.
31 x 20 "		800 to 1200 "	30 x 6 "
36 x 24 "		1800 to 2600 "	36 x 6 "
42 x 30 "		3000 to 4000 "	

CHARLES
ROSS & SON,
16, 18 and 20
Steuben St.,
Brooklyn, N. Y.



No. 32. B. With Cast Iron Steam Jacketed Kettle without Discharge Outlet.

SIZES AND CAPACITY.

Diameter.	Depth.	Capacity.	Size of Tight and Loose Pulleys.
34 1/2 x 26 3/4 inches.		40 gallons.	
40 x 31 3/4 "		60 "	
46 1/4 x 38 "		120 "	
52 1/4 x 44 1/4 "		165 "	

The above are suitable for mixing heavy, stiff, paste mass, such as paints, varnish gums, and other materials, which require heat in dissolving and mixing.

WE CAN FURNISH THE INSIDE KETTLE OF
COPPER INSTEAD OF IRON IF REQUIRED.



PRICES ON APPLICATION.

Ross' White Lead and Color Mixers.

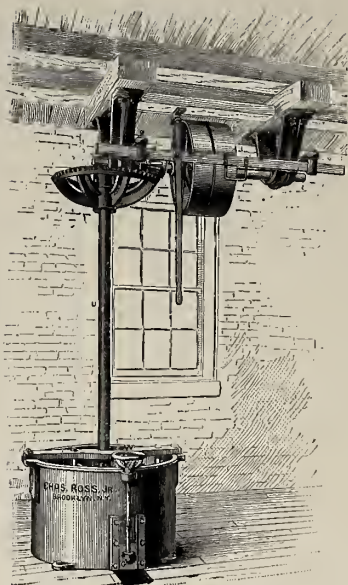


Explanation of Illustrations.

- U—Upright Shaft.
S—Line Shaft.
L—Lever for engaging and disengaging clutches.
W—Wheel for raising discharge gate.
G—Gates for discharging contents.



PRICES ON APPLICATION.



No. 34.

The above illustrates **Lead and Color Mixers**, set on the floor with gearing and pulleys attached to the ceiling, and arranged to discharge through the floor into receiver, or mills on the floor below.

We build these Mixers suitable for **any height** of ceiling by having longer or shorter upright shafts.

The **Gates** will be furnished to open by screws or levers, as preferred.

The advantage of our **Lead and Color Mixers**, is that they have a **stationary set of knives**, through which the material is driven by revolving knives, as shown on page 16, thoroughly breaking up and preventing any large mass being carried around, thereby making very **rapid work**.

No. 34 is a single **Lead and Color Mixer** driven by **tight and loose pulleys**.



No. 35.

No. 35 is two **Lead and Color Mixers** driven by **one line shaft** on the ceiling. Any number of mixers can be driven in this way from **one line shaft**, each being provided with a **clutch** as shown, so that they can be run **singly or collectively**.

This is a very convenient and substantial way of putting up a number of mixers, avoiding the care of a number of **belts and loose pulleys**.

SIZES AND CAPACITY.

Diameter.	Depth.	Capacity.	Size of 'Tight and Loose Pulleys.
24 x 20 inches.		400 to 600 lbs.	24 x 6 inches.
31 x 20 "		800 to 1200 "	30 x 6 "
36 x 24 "		1800 to 2600 "	36 x 6 "
42 x 30 "		3000 to 4000 "	

The depth of any of the above mixers can be increased at a small additional cost.

Ross' Improved Ready Mixed and Semi-Paste Paint Mixers.

PRICES ON APPLICATION

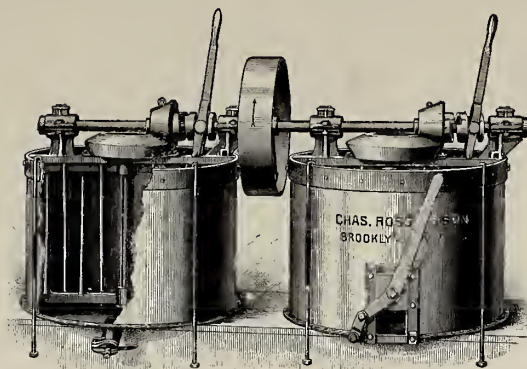


No. 36. With Bottom Liquid Gate.

CHARLES ROSS & SON.

16, 18 & 20 Steuben St.,

BROOKLYN, N. Y.



No. 36. Bottom Liquid Gate.

No. 37. Slide Gate for Semi-Paste.

The above illustrates our complete **Portable Mixers** for thoroughly and rapidly mixing **Ready Mixed Paints**, and other **Liquid** and **Limped Goods**.

The **Tanks** are built of **heavy sheet steel**, strongly and substantially riveted together.

The **Mixers** consist of a **lower sweep** (running close to the bottom, throwing the material upward) having on it **vertical knives**, running close to the **sides** of the tank, and through the **centre**, also **stationary knives**, projecting down from the top bar, **cutting** through the **material** thrown against them by the revolving sweep and knives.

The **Gears** are carefully **covered** and guarded, as shown in illustrations, to keep out all dust and dirt.

No. 36 Mixer is fitted with our Special **Bottom Liquid Gate**, which allows all the material to be **drawn** off from the **bottom**. We furnish these gates in **two sizes** with **1½ in.** outlet and **2½ in.** outlet. The **1½ in.** outlet is generally used on **Liquid Paint Mixers**.

No. 37 is the same Mixer fitted with a water or oil tight **Slide Lever Gate** for Semi-pastes. They are **portable**, light and **convenient** for transportation.

We build the following sizes fitted up complete with **Tight and Loose Pulleys**, **Patent Adjustable Belt Shifter**, and **Hook Bolts** for fastening down to the floor or bench.

SIZE.		FLOOR SPACE.	
50 gal. capacity per mixing.		3 ft. 5½ in. length,	2 ft. 8½ in. high.
135 "	" " " "	4 " 2 " "	3 " 3 " " 4 " "
200 "	" " " "	5 " 2 " "	4 " 2 " " 4 " 1 " "
300 "	" " " "	5 " 8 " "	4 " 9 " " 4 " 6 " "

Larger Sizes built when required to set on the floor, with **Drop Pipes** projecting below, so the contents can be drawn direct into mill hopper or other receptacle on the floor below.

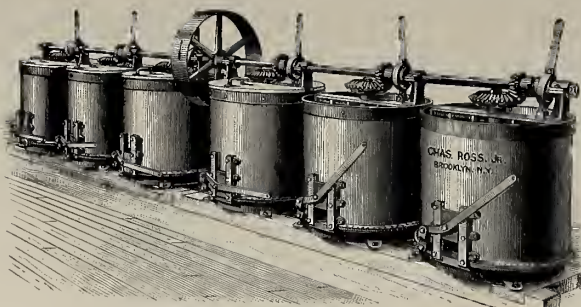
We build all sizes in **Gangs** of from **two** to **twenty**, each Mixer being fitted with a **Separate Clutch**, so they can be stopped and started independently of each other, **one pulley** driving the whole, as shown in above illustration, and also in **No. 38 Gang** of six, as shown on **Page No. 10**.

Same style built with **Wood Tanks** and **Wood Stirrers** for mixing material when iron or metal cannot be used. See page 20.

Double Motion Mixer.

WITH STEAM HEATED BOTTOM.

For Mixing Liquid and Semi-Paste, such as Chocolate,
Paints, Lubricating Greases and Compounds,
Dissolving Gums, Rubber, etc.



No. 38.

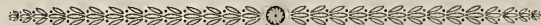
Gang of Liquid and Semi-Paste Paint Mixers.

The above illustrates a Gang of 50 Gallon Mixers with Steam Heated Bottoms and Slide Lever Gates.

We build these Gangs of Mixers for Mixing from 50 to 300 gallons each, and as many as Twenty in a Gang without Steam bottoms. See page 18.

Each Mixer is provided with a clutch so that they can be run singly or collectively.

Gates of different styles, see page 18.



CHARLES ROSS & SON, 16, 18 & 20 Steuben St., Brooklyn, N. Y.



No. 39.

The **Steam Bottom** is a hollow cast-iron chamber, so arranged that the steam circulates so as to give a uniform heat all over the bottom.
Capacity, 60 gallons per mixing.

PRICES ON

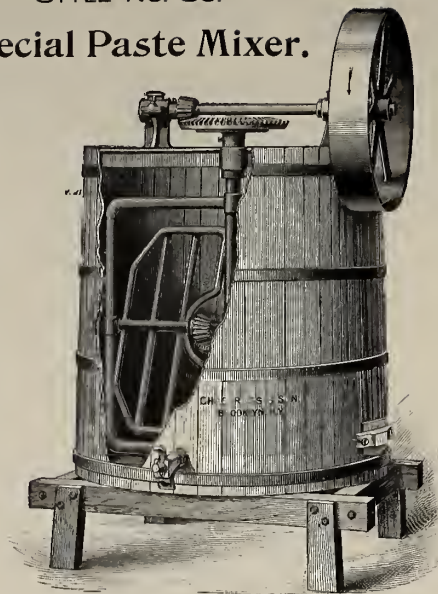
APPLICATION.



Floor Space required, 3 feet 2 inches by 2 feet 6 inches. It has two sets of revolving knives or stirrers, revolving in opposite directions, thus mixing very rapidly and thoroughly.

STYLE NO. 36.

Special Paste Mixer.



Built with **Wooden Tanks** and with **Iron Stirrers** or with **Wood or Composition Stirrers**, for mixing or agitating Paste, Dyes, Shellac, Varnishes, &c.

Sizes built from 50 to 500 gallons.

The above illustration represents a special style of Mixer used by **Paste and Size Manufacturers** with large **frame rotating** around the tub, driven by **Bevel Gears** on top of the Mixer.

Inside the revolving frame is arranged **Two Mixers** revolving on **horizontal spindles** driven by **Bevel Gears** inside of the Mixer, as shown on illustration.

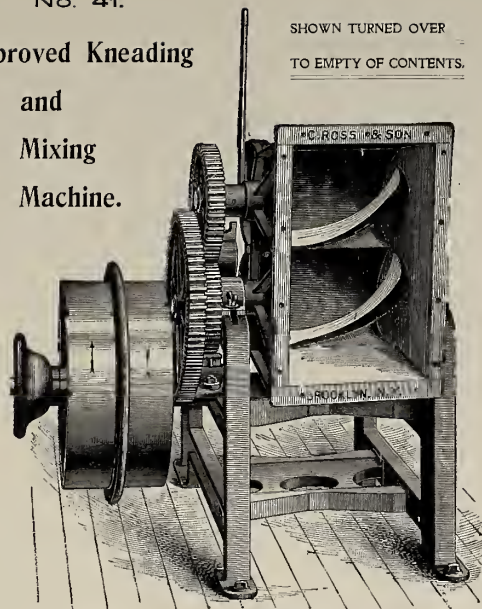
This is a very **perfect** and **thorough** Mixer.

PRICES ON APPLICATION.

No. 41.

Improved Kneading and Mixing Machine.

SHOWN TURNED OVER
TO EMPTY OF CONTENTS.



CHARLES

ROSS & SON,

16, 18 and 20

Steuben St.,

Brooklyn, N. Y.

The above illustrates our **Kneading Machine** driven by **Double Motion Friction Clutch Pulleys**, which are driven by an open and cross belt in opposite directions by **reversing the hand wheel**, (shown outside of the pulleys) in the **opposite direction** to which the Kneaders are running, thus **reversing the motion** in order to **loosen** any particles of the **mass** clinging to the Kneader Blades.

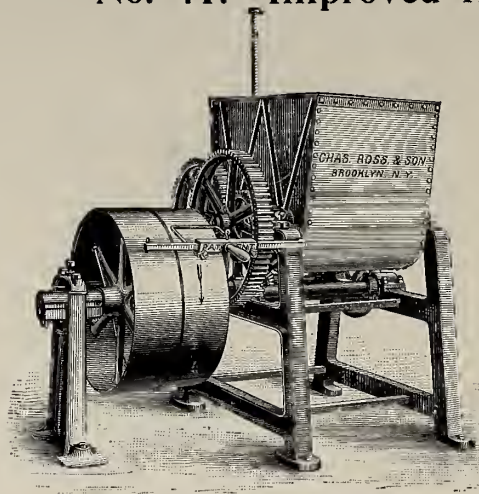
We can furnish the **Double Motion Friction Clutch Pulleys** on all sizes of our Kneading Machines.

The above illustrates a medium sized Kneader for kneading from 40 to 150 lbs. of material per mixing.

In our smaller sizes the Kneading **Trough** is raised and **turned over** by a **hand lever**. For further description see page 21, or our larger size.

We can furnish **this size** Kneader with a **hollow jacket** on the lower half of Kneading Trough for **heating** or **cooling** as may be required.

No. 41. Improved Kneading and Mixing Machines.



SHOWN IN POSITION FOR WORK.

For mixing Litho. and Printing Inks, Putty, White Lead, Paints, Wood Fillers, Pill Mass, Chocolate, Lozenge Paste, Vermicelli, Macaroni, Bread Dough, Cement, Concrete, Rubber and Emery Composition, &c.

It will knead and mix any **thick pasty material more rapidly** than any other style of mixer.

The **capacity** of this style of machine is **very large**.

The constant changing, mixing and kneading movement produces **thoroughness** and **rapidity** of action and consequent **perfection** of goods, also a great saving of labor and power.

Capacity of the above Kneader is 350 lbs. of Putty or half a bbl. of Flour per mixing.

To **empty** of contents throw back the **Trunnion Caps**, and a few turns of the **Crank Wheel** on the left hand side of the machine will **turn the Kneader Trough** over, as shown, so that it can be **quickly emptied** and thoroughly cleaned.

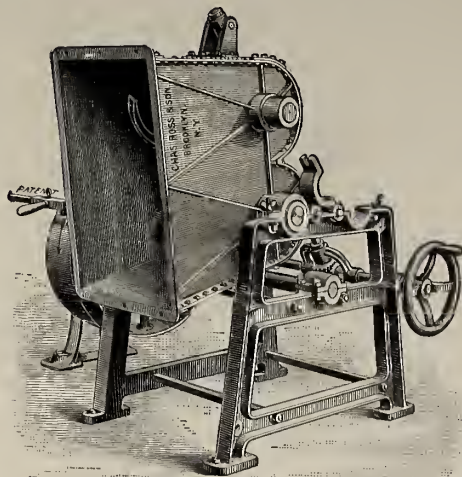
CHARLES

ROSS & SON,

16, 18 & 20

Steuben St.,

Brooklyn, N. Y.



SHOWN TURNED OVER TO EMPTY OF CONTENTS.

For **convenience** of **cleaning** all surfaces are flat, so that it can be scraped and cleaned perfectly with large spatula knives or scrapers.

Sizes of **Tight** and **Loose Pulleys** 24 in. diameter by 6 in. face.

Speed of Pulleys 150 revolutions per minute.

Floor Space required 5 ft. 6 in. by 4 ft.

Height from floor to top of mixing trough 4 ft.

LARGER AND SMALLER SIZE KNEADERS.

We build several sizes of these machines with a capacity from one bbl. to six bbls. per mixing.

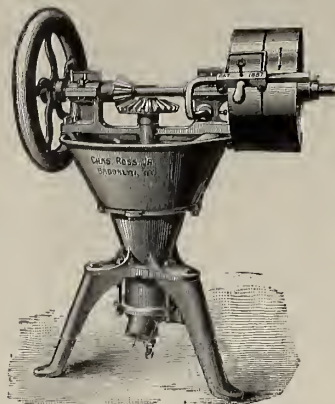
The **Kneaders** are made of **cast steel** having great strength.

Steam heated or **Water Cooled Kneaders** built with **Jackets** for heating or cooling material to be mixed as required.

Brass or Composition Kneaders are built for materials affected or injured by contact with iron or steel. For working such pigments we build **Kneading Machines of Brass or Composition** to suit materials to be worked.

No. 70. Improved Portable Breaker.

PRICES ON APPLICATION.



CHARLES ROSS & SON,
16, 18 & 20 STEUBEN STREET,
BROOKLYN, N. Y. - - - U. S. A.



For breaking Drugs, Roots, Varnish Gums, Glue and any material that needs to be granulated the size of corn and finer.

It requires very little power, and is simple and efficient. Can be set up in running order in one hour by any person. The grinding surfaces are steel and can be renewed with little trouble and at small expense.

It can be adjusted to crack fine or coarse by means of a set screw underneath. The capacity is from 15 to 30 bushels per hour according to the speed it is run. Speed of Pulleys, from 200 to 350 revolutions per minute. Size of Pulleys. 14 in. diameter by 4 in. face. Floor Space required 3 ft. 6 in. by 30 inches wide. Height from floor to center of pulley shaft, 3 ft. 4 in. Height from floor to top of Hopper, 2 ft. 10 in. Diameter of Hopper at the top, 26 in.

Each machine is furnished with Patent Adjustable Belt Shifter.

No. 45. Eccentric Revolving Varnish Cutter and Mixer.



For cutting Shellac, Spirit Varnishes and dissolving Rosin and other Gums. Our Eccentric Motion saves 30 to 40% of time compared with the plain revolving Churn.

Standard Size carried in stock 70 gal. Churn charge 50 gal. at one mixing.

Gates, Composition 5 in. diameter, with Screw Cap or Cover, and 2 ft. bar or lever for closing or opening gate.

Frame or Stand of iron with Babbitt Bearings.

Pulleys Tight and Loose with our Patent Adjustable Belt Shifter.

Floor Space required 5 ft. 6 in. long by 3 ft. wide.

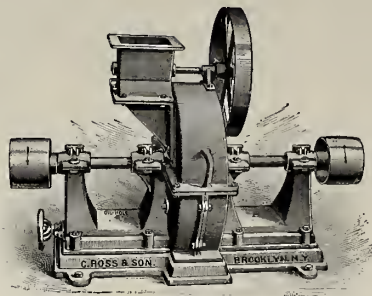
Larger or smaller sizes furnished if desired.

Gudgeons or Gates will be furnished separate from Churn if desired.

Special Shellac Cutters built for cutting from 100 to 300 gal. in 2½ hours.

No. 66. Improved Disintegrator or Pulverizing Mill.

PRICES ON APPLICATION.



This is a powerful machine of **large capacity** for grinding or disintegrating and combining moderately hard or moist substances, such as:

Alum, Borax, Bituminous Coal, Clay, Flour of Sulphur, Fish Scrap, Glue, Guins, Dry Colors, Infusorial Earth, Litharge, Oil Cake, Ochre, Rosin, Salt Cake, Starch, Sugar, Tankage, Oxide of Zinc, Whiting, Paris White, Hard Pitch, Asphaltum, &c.

It is also an excellent machine for **Amalgamating**, or **Mixing** a number of Dry Materials together, such as:

Prepared Kalsomine, Dry Colors, Tinted Dry Leads, Paint Stock, Fertilizers, &c.

It is exceedingly simple, requiring **no adjustment** or **dressing**, and can be operated **by any laborer**.

It grinds on the well-known **Attrition** principle. The **four steel cages** running at **high velocity**, dash the particles of material against themselves and thus reduce them.

The **Pulleys** driving the cages are run in the **opposite directions** as shown by indicating **arrows** on the faces of pulleys in illustration.

They are **fed** through the Hopper on left hand side of top casing, shown in view of mill closed. The **Discharge** opening is under the casing enclosing the cages, as shown in view of mill opened. They can be set up on iron

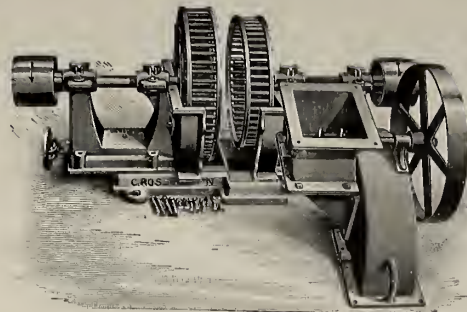
CHARLES

ROSS & SON,

16, 18 & 20

Steuben St.,

Brooklyn, N. Y.



stanchions, (furnished by us when ordered) and discharged into a bin underneath, or they can be put on the floor and discharged into a bin or room under the floor.

There is **no trouble** in **setting** these mills, as they are all ready to put the belts on when delivered.

Opening or taking apart the **Mill**, for cleaning &c., is **quickly** and easily done by **taking off top half of Casing**, removing bolts, bolting bearing frame to Bed Plate, then drawing frame and cages apart by **Tail Screw** as shown by open illustration.

They are very **strong** and **substantially built** of iron and steel in the most thorough manner.

Cages built on special **steel discs** of **great tensile strength** and of steel throughout, and are in **perfect running balance**.

Sizes usually built and carried in stock:

Diameter of Largest Cage:	Speed of Cages:	Size of Pulleys:
24 in.	800 to 1500,	8 x 6 in. face.
30 in.	600 to 1200,	10 x 7 in. face.
Capacity on clay per hour:	Floor Space:	Height:
1 to 3 tons.	4 ft. 10 in. by 3 ft.	3 ft. 5 in.
2 to 5 tons.	6 ft. 4 in. by 4 ft.	4 ft.

LARGER AND SMALLER SIZES BUILT IF DESIRED.

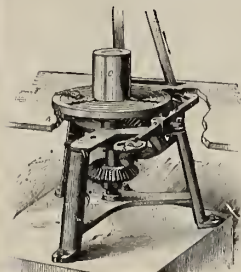
Charles Ross & Son's



PAINT = = = =
FACTORY = =
CONVENIENCES,



SAVE TIME,
WASTE AND
TROUBLE. —



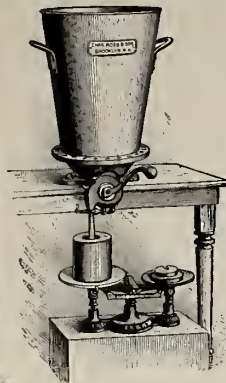
No. 28.

Can Polisher or Burnisher.

For Polishing Paint Cans from
1 lb. to 25 lbs. Giving the can a
clean, bright surface and better
hold of labels. A boy can polish
on one machine from 1,200 to 1,600
cans per day.

Tight and Loose Pulleys 8 in. diameter, 2 in. face.

Speed of Pulleys about 120 Revolutions per minute.



No. 29.

CAN FILLER

For Filling Paste Paints in Cans.

A girl with one of our Fillers can fill as
many Cans in a day, and do cleaner
work than four girls can fill by the
old way. They cost nothing compared
to the amount of labor saved.

Size of Paint Hopper,

15 inches diameter at top
by 23 inches deep.

Charles Ross & Son, COMPANY.

Twenty Minutes from Fulton
Ferry.



16, 18 & 20 Steuben St.,

Twenty Minutes from New
York City Hall, via Brooklyn
Bridge and Flushing Ave. Cars.

Opposite U. S. Naval Hospital.

Brooklyn, N. Y.